



# **“Heritage to Horizons”**



## **Wright-Patterson Air Force Base, Ohio Economic Impact Analysis**

**30 September 2007**

## Table of Contents

Table of Contents .....	2
Executive Summary .....	1
Figure 1: Economic Area for Wright-Patterson AFB, OHIO .....	2
Wright-Patterson's Heritage .....	3
Capital Assets.....	5
Table 1: Real Estate and Infrastructure Operated by Wright-Patterson AFB.....	5
Summary of Personnel and Gross Annual Payroll by Classification and Housing Location .....	6
Table 2: Summary of Personnel and Gross Annual Payroll by Classification and Housing Location.....	6
Personnel and Payroll Demographics .....	7
Table 3: Payroll and Personnel Totals in Various Employee Categories .....	7
Figure 2: Wright-Patterson AFB Personnel Breakout by County (24,817).....	8
Figure 3: Wright-Patterson AFB Payroll Breakout by County (\$1,691,865,162) .....	8
Personnel and Payroll Trend Charts .....	9
Figure 4: Wright-Patterson AFB Payroll Trend.....	9
Figure 5: Wright-Patterson AFB Personnel Trend .....	9
MSA Military and Civilian Retirees .....	10
Figure 6: Number of Military/Civilian Retiree Benefit Recipients by Service .....	10
Figure 7: Disbursement of Military/Civilian Retiree Benefit by Service .....	10
Expenditures for Construction, Services, Materials, Equipment and Supplies .....	11
Table 4: Expenditures for Construction, Services, Materials, Equipment and Supplies.....	11
Annual Expenditure Summary Wright-Patterson AFB, OH.....	12
Figure 8: Annual Expenditure Summary .....	12
Estimated Indirect Jobs Created and Total Economic Impact .....	13
Table 5: Estimated Indirect Jobs Created .....	13
Table 6: Estimated Total Economic Impact.....	13
Total Economic Impact Wright-Patterson AFB, OH.....	14
Figure 9: Total Economic Impact on MSA.....	14

Educational Impact AID .....	15
Figure 10: Education AID by County (Section 8003) .....	15
Table 6: Educational Impact .....	16
Combined Federal Campaign Contributions .....	17
Figure 11: Combined Federal Campaign Contributions .....	17

## Executive Summary

The purpose of this document is to present the economic impact of Wright-Patterson Air Force Base (WPAFB) on the local economic area. The total economic impact to the local Dayton community was \$4.4B. The payroll of military and government civilian employees was \$1.7B. The non-payroll expenditures were \$1.7B. The indirect jobs supported by the base are estimated to be approximately 28K (restaurants, dry cleaners, etc.). Even though military and civilian retirement disbursements are not considered a part of total economic impact due to regulations, the annual disbursement of military and civilian retiree benefits was approximately \$754M. In 2007, the 88th Comptroller Squadron refined the Economic Impact Analysis (EIA) to better depict the economic impact on the local Dayton community. In particular, the 2007 Economic Impact Analysis (EIA) contains an amendment to the definition of the local area, the calculation of military personnel living on base and the quantitative approach used to calculate the WPAFB impact to the local economic area.

The definition of the local economic area for this report encompasses five counties: Clark, Greene, Miami, Montgomery and Preble. From 2000 to 2003, the WPAFB Economic Impact Analysis (EIA) defined the local economic area as the Metropolitan Statistical Area (MSA) including Clark, Greene, Miami and Montgomery counties. From 2003 to 2006, the WPAFB EIA defined the local economic area as the MSA including Greene, Miami, Montgomery and Preble counties. The 2003 EIA expunged Clark County from its purview. The change was based upon the redistricting of counties in MSAs by the US Office of Management and Budget. According to the Ohio Office of Workforce Development, Metropolitan Statistical Areas “have at least one urbanized area with a population of 50,000 or more, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.”<sup>1</sup> It is critical to note that the 2006 Economic Impact Analysis defined the local economic area as Greene, Miami, Montgomery and Preble counties; however the calculations included Clark County economic data. In 2007, the WPAFB EIA local community definition changed to include Clark, Greene, Miami, Montgomery and Preble counties. The newly defined local economic community better suits the original purpose of the Economic Impact Analysis and resolves the 2006 EIA disparity. To not include Clark County in the analysis would vitiate the assessment of the true impact of WPAFB on the local community.

The 2007 Economic Impact Analysis also contains a new methodology for calculating military personnel living on base; living on base includes brick housing, dorms and privatized housing. The innovative method enables the report to more accurately represent the number of military personnel and dependents living on base. The new method results in accounting for an additional 1,300 military personnel and 3,200 military dependents. Furthermore, the new estimation method enables the report to portray a clearer picture of payroll figures of personnel living on base.

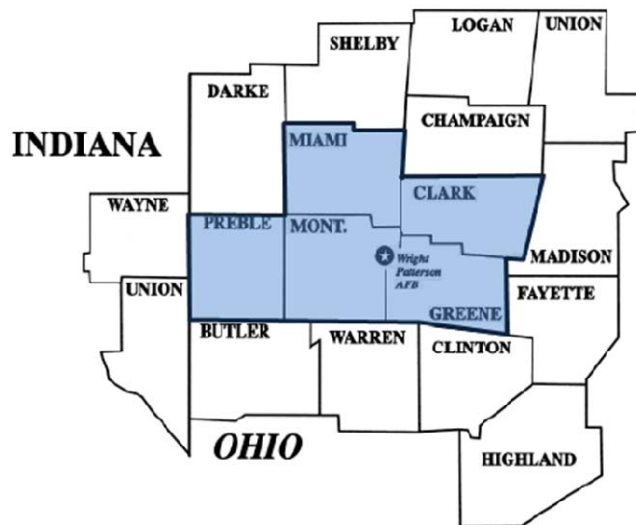
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<sup>1</sup> Ohio Office of Workforce Development. <http://lmi.state.oh.us/maps/MapofMSAs2000.htm>, May 6, 2008.

In addition to amending the definition of the local community and the new methodology for calculating the number of personnel living on base, the 2007 Economic Impact Analysis also reevaluated the statistical approach to calculating contractors at WPAFB. The new quantitative approach resulted in a precipitous increase in the reported contractors. The 2007 figure for contracted civilians increased from 1,043 in 2006 to approximately 5,350 contractors (see Table 1 for further details). The 5,350 figure more accurately depicts the number of WPAFB civilian contractors. Understanding the importance of WPAFB to the local economy, we will continue to improve our analytical methods to best capture the economic data for future reporting.

The information in this document was gathered from various organizations at Wright-Patterson AFB, other Air Force agencies, Department of Defense agencies, other federal agencies and private sector sources. The EIA provides the reader with an encapsulated view of one of the largest Air Force bases in the world. It was prepared by the 88<sup>th</sup> Comptroller Squadron, Financial Analysis Flight, Wright-Patterson AFB, Ohio, using 30 September 2007 data. Questions or comments concerning the statistics or data contained in this pamphlet may be addressed to Capt David Mazur, 88 ABW/FMA, 1940 Allbrook Drive, Room 106, Wright-Patterson AFB, OH 45433-5209, commercial telephone (937) 522-2023 or DSN 672-2023.

**Figure 1: Economic Area for Wright-Patterson AFB, OHIO**



## **Wright-Patterson's Heritage**

Wright-Patterson AFB near Dayton, Ohio, traces its origin directly from the Wright brothers' pioneering flights in 1904 and 1905 at the Huffman Prairie Flying Field located in the middle of the installation. Its past, present and future are all inextricably linked with the Wright brothers' legacy. Dayton was the Wright brothers' home and Daytonians consider their city the "Birthplace of Aviation". The Wrights' early years, their bicycle shops, their printing business, and their early aviation efforts are evident throughout the greater Dayton area. Just off the end of Wright-Patterson's active runway, a replica of the Wright brothers' 1905 hangar overlooks the Huffman Prairie Flying Field. Here they established their first flying field, developed the first practical airplane, and, in their own words, "really learned to fly". The Flying Field has been designated a National Historic Landmark and is part of the Dayton Aviation Heritage National Historical Park.

The installation itself has been a leader in military aviation since World War I. Aviation research and development began to flourish at Wright-Patterson when the U.S. entered World War I. Wilbur Wright Field was established in the summer of 1917 as a pilot training school at the site of Wright-Patterson's present flight line. In the fall of 1917, McCook Field was established as an Air Service engineering center. McCook Field was located near downtown Dayton at what is now the intersection of State Route 4 and Interstate 75. In 1927, a new aerodrome and research complex were constructed on land donated by the citizens of Dayton to replace the overcrowded McCook Field. Named Wright Field in honor of both brothers, it is now part of Area B.

Wright-Patterson's logistics heritage also dates from World War I. The Fairfield Aviation General Supply Depot was established in 1917 adjacent to Wilbur Wright Field. The Fairfield Air Depot, as it became known, was a major Army Air Corps depot through the end of World War II. In 1931, the area encompassing the Fairfield Air Depot, Wilbur Wright Field, and the Huffman Prairie Flying Field, was renamed Patterson Field in honor of Lt. Frank Stuart Patterson who died in 1918 when his DH-4 crashed on the airfield during a flight test.

In 1948, Wright and Patterson Fields merged to create Wright-Patterson Air Force Base. The 88th Air Base Wing has been the host organization most of the period since the merger. It also provides base operating support for the installation.

Wright-Patterson is one of the largest, most diverse, and organizationally complex bases in the Air Force. Its missions range from acquisition and logistics management, to research and development, education, flight operations, and an assortment of other defense and non-defense activities. Wright-Patterson is home to the Air Force Materiel Command, the Aeronautical Systems Center, the Air Force Research Laboratory, the Air Force Security Assistance Center, the Air Force Institute of Technology, the National Air and Space Intelligence Center, the National Museum of the United States Air Force, the 445th Airlift Wing (AFRC), a regional Department of Defense medical center, and numerous other Air Force, Department of Defense, and government agencies.

Today, as in the first century of flight, the nation's aeronautical weapon systems are conceived, tested, modified, and acquired at Wright-Patterson AFB. The installation's legendary heritage spurs modern aerospace scientists and logisticians in their quest to keep man flying higher, faster, farther, and safer than ever before. The installation also serves as an aerial port of embarkation and plays a continuing role in the War on Terrorism, to include Operations Enduring Freedom, Noble Eagle, and Iraqi Freedom.

The excellent community spirit and cooperation of the installation and its personnel is another hallmark of Wright-Patterson's heritage. Base personnel contribute hundreds of volunteer hours to community projects. They support the annual Vectren Dayton Air Show, offer special events at the National Museum of the United States Air Force, host the Air Force Marathon, conduct education outreach programs, and work with the Dayton Aviation Heritage National Historical Park to enhance the Miami Valley's legacy as the Birthplace of Aviation.

The creativity and professionalism of base employees combined with the vitality of the Miami Valley's citizens continue to make Wright-Patterson Air Force Base the birthplace, home, and future of aerospace.

## Capital Assets

(As of September 30, 2007)

**Table 1: Real Estate and Infrastructure Operated by Wright-Patterson AFB**

<b>Building Category</b>		<b>Square Feet</b>
Housing (Includes detached garages and storage buildings)		859,901
Community (Includes commissary, BX, BAQ, VAQ/VOQ, and recreation)		2,506,619
Research and Development		4,862,663
Hospital		825,533
All Other Buildings (Includes Operations & Training, Supply, Maintenance & Production, and Administration)		6,413,088
Other Structures and Facilities		709,546
Utilities and Ground Improvement		243,353
<b>Total</b>		<b>16,420,703</b>

<b>Dormitory/Temporary Quarters</b>		<b>Number of Units</b>	<b>Bed Capacity</b>
Airman/NCO		5	500
Visiting Officer/Airman Quarters		8	422
Temporary Lodging Facilities		46	144
Compassionate Care Facilities		16	32
<b>Total</b>		<b>75</b>	<b>1,098</b>

<b>Land</b>		<b>Acres</b>
Fee Owned		7,629
Easements		431
Right of Way		83
Leased		2
<b>Total</b>		<b>8,145</b>

<b>Runways</b>		<b>Linear Feet</b>
Area A		7,000
Area C		12,600
Area B (inactive)		7,147
<b>Total</b>		<b>26,747</b>

<b>Facilities Data</b>		<b>Number of Buildings</b>
Buildings		563
Family Housing <sup>2</sup>		265
<b>Total</b>		<b>828</b>

<sup>2</sup> Housing includes brick housing, Green Acres, and Pines Estates.



## Summary of Personnel and Gross Annual Payroll by Classification and Housing Location

(As of: 30 September 2007)

**Table 2: Summary of Personnel and Gross Annual Payroll by Classification and Housing Location**

CLASSIFICATION	LIVING ON BASE <sup>3</sup>		LIVING OFF BASE		TOTAL	
	PERSONNEL	PAYROLL \$ <sup>4</sup>	PERSONNEL	PAYROLL \$	PERSONNEL	PAYROLL \$
<b>1. APPROPRIATED FUND MILITARY</b>						
Active Duty	1,828	\$67,435,646	4,680	\$342,502,170	6,508	\$409,937,816
AGRs	0	\$0	399	\$30,414,915	399	\$30,414,915
Non-Extended Active Duty ANG/Reserve	0	\$0	2,113	\$27,439,181	2,113	\$27,439,181
<b>TOTAL:</b>	<b>1,828</b>	<b>\$67,435,646</b>	<b>7,192</b>	<b>\$400,356,266</b>	<b>9,020</b>	<b>\$467,791,912</b>
<b>2. ACTIVE DUTY MILITARY DEPENDENTS</b>	<b>3,648</b>		<b>2,538</b>		<b>6,186</b>	
<b>3. APPROPRIATED FUND CIVILIANS</b>						
General Schedule & Grades Similar (GG)					5,203	\$344,773,177
Federal Wage Board					577	\$29,010,430
Other/NSPS					3,695	\$353,154,627
<b>TOTAL:</b>					<b>9,475</b>	<b>\$726,938,234</b>
<b>4. NON-APPROPRIATED FUND CIVILIANS &amp; PRIVATE BUSINESS</b>						
Civilian NAF					704	\$14,590,927
Civilian BX					224	\$4,478,000
Chase Bank, Credit Union					35	\$1,028,820
Office Runway					9	\$261,319
Contract Civilian					5,350	\$476,775,950
<b>TOTAL:</b>					<b>6,322</b>	<b>\$497,135,016</b>
				<b>GRAND TOTAL:</b>	<b>24,817</b>	<b>\$1,691,865,162</b>

<sup>3</sup> Living on Base includes military members living in privatized housing.

<sup>4</sup> To estimate the military payroll, rank and years of service are needed. In the payroll figure above, the years of service used were “over 10 years” for E-1 to O-8 and “over 20 years” for O-9 and O-10.

## Personnel and Payroll Demographics

(As of: 30 September 2007)

The fiscal year 2007 payroll for Wright-Patterson employees in the local area was over \$4.6 million per day. The Bank One, Credit Union, Office Runway and Contractor personnel are private business employees that were included in the economic impact calculations since they work at Wright-Patterson AFB.

**Table 3: Payroll and Personnel Totals in Various Employee Categories**

	<b>Payroll</b>	<b>Number of Personnel</b>
Appropriated Fund Civilians	\$726,938,234	9,475
Appropriated Fund Military	\$467,791,912	9,020
Civilian Non-Appropriated Fund	\$14,590,927	704
Civilian Base Exchange	\$4,478,000	224
Branch Banks/Credit Union/Contractors	<u>\$478,066,089</u>	<u>5,394</u>
<b>Total</b>	\$1,691,865,162	24,817

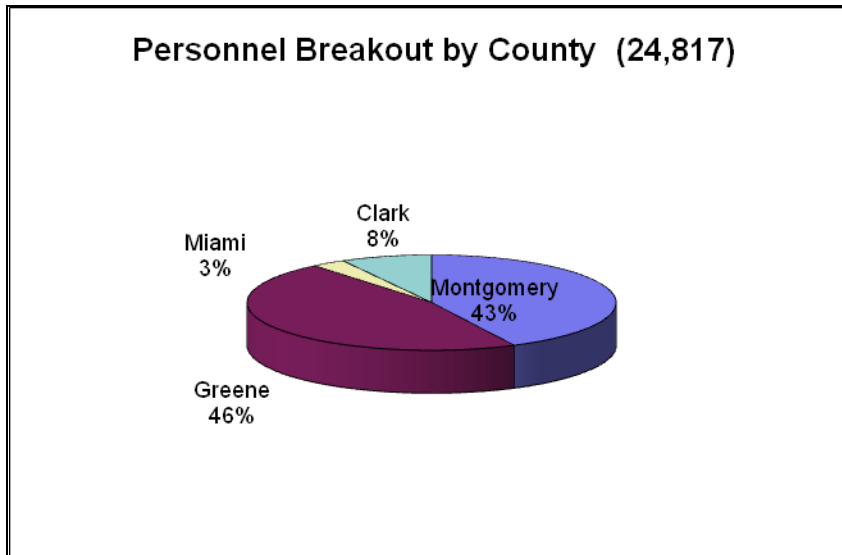
Approximately 91 percent of Wright-Patterson's federal civilian employees live in the defined local economic area of Clark, Greene, Miami, Montgomery and Preble counties<sup>5</sup>. According to the obtained data, approximately all active duty military members reside within the local economic area. With the inability to collect comprehensive data on the residence of civilian contractors, estimating the percentage of civilian contractors residing in the local economic area would be misleading. The 88 ABW will continue to strive for improvement in the statistical methods used for the Economic Impact Analysis; this includes determining the best methods to estimate the residence demographics of civilian contractors.

The following pie charts (Figure 2 and Figure 3) provide a breakout of the total personnel and payroll by percentage and county:

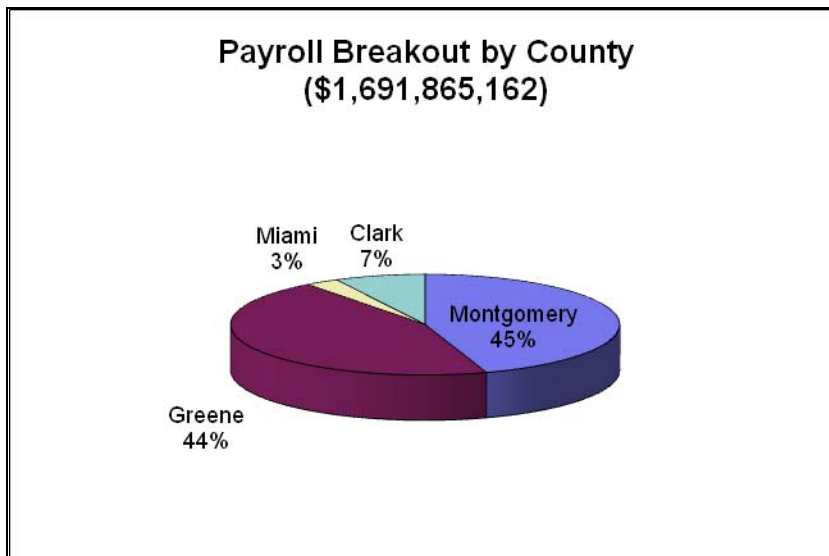
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<sup>5</sup> The number of government civilians living in the economic area is 9,475. The total number of government civilian employees is 10,437.

**Figure 2: Wright-Patterson AFB Personnel Breakout by County (24,817)<sup>6</sup>**



**Figure 3: Wright-Patterson AFB Payroll Breakout by County (\$1,691,865,162)**

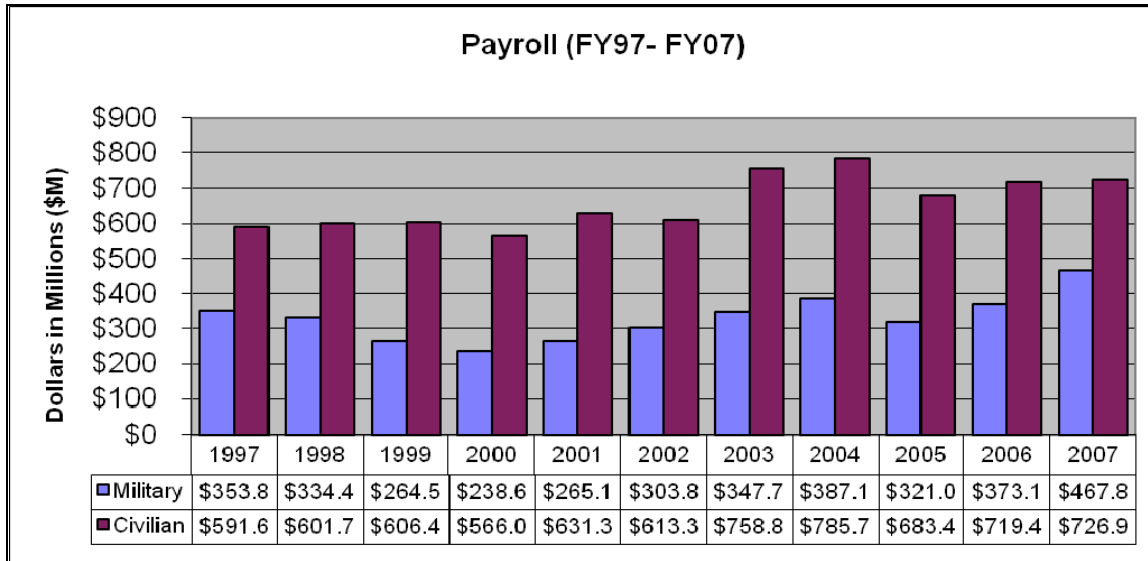


<sup>6</sup> These percentages are based on the distribution of military and personnel services by Wright-Patterson AFB. The assumption is made that the civilian contractor employees are distributed in the same manner.

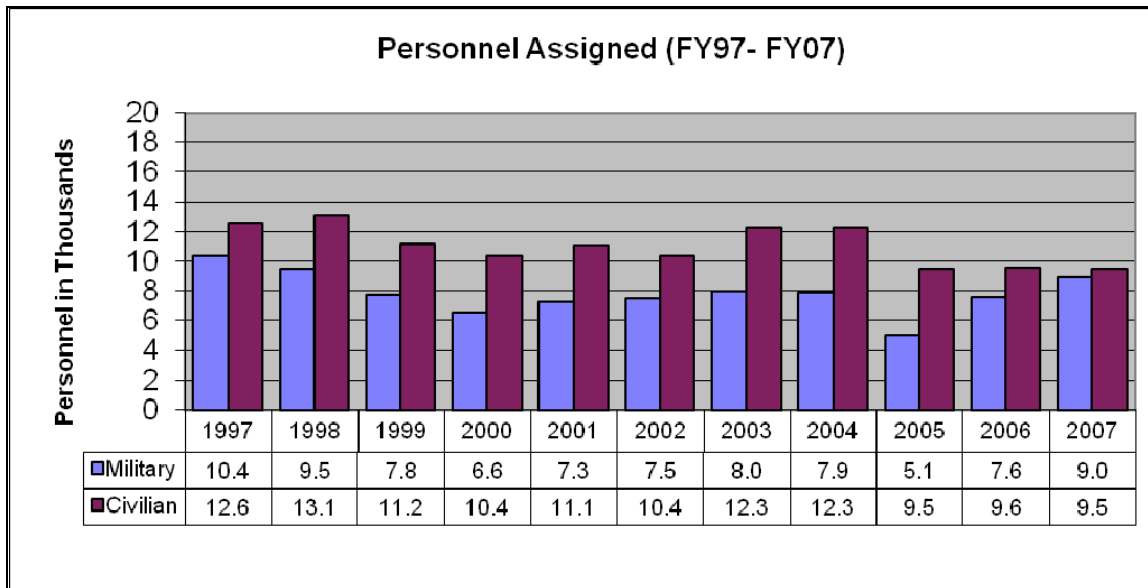
## Personnel and Payroll Trend Charts

(As of: 30 September 2007)

**Figure 4: Wright-Patterson AFB Payroll Trend**



**Figure 5: Wright-Patterson AFB Personnel Trend<sup>7</sup>**

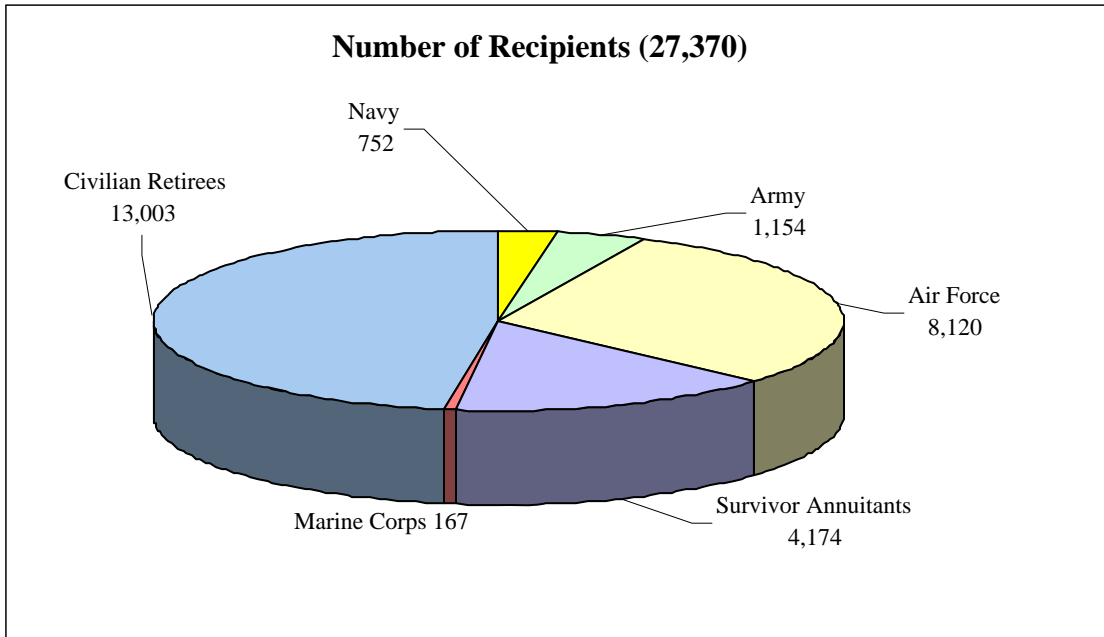


<sup>7</sup> All figures for FY97-FY07 include personnel who reside in the WPAFB local community based upon the respective definitions of local community at the time of the research. The FY06 and FY07 military figures include active duty, as well as air reserve technicians and weekend reserve personnel. The FY06 and FY07 civilian figures include appropriated federal civilian employees. Reservists were not previously captured in these payroll charts.

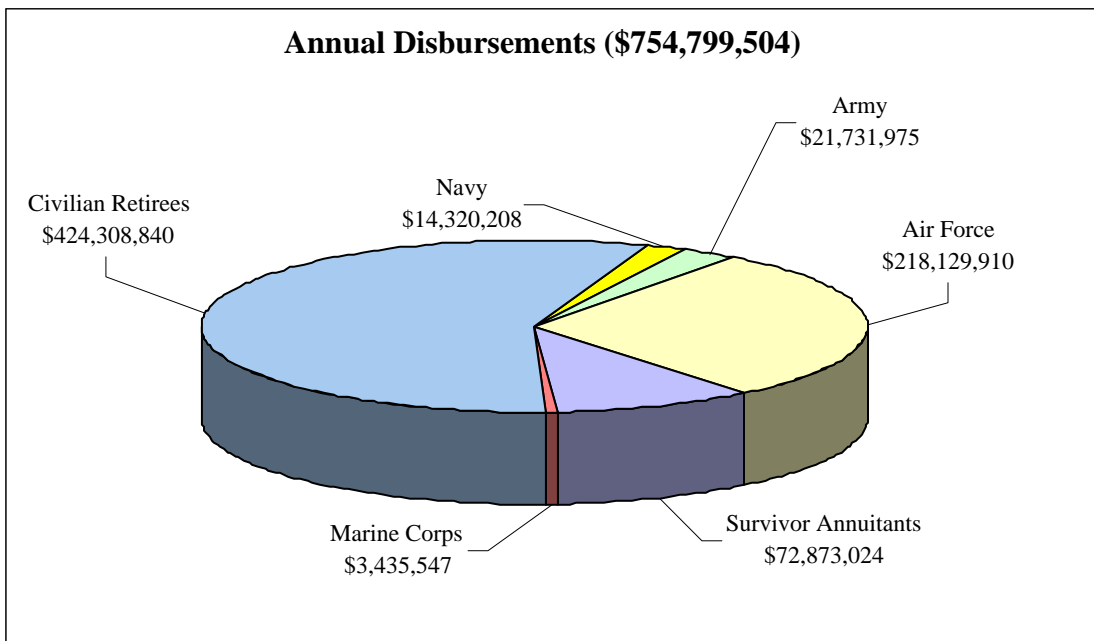
## MSA Military and Civilian Retirees

(As of: 30 September 2007)

**Figure 6: Number of Military/Civilian Retiree Benefit Recipients by Service**



**Figure 7: Disbursement of Military/Civilian Retiree Benefit by Service**



## Expenditures for Construction, Services, Materials, Equipment and Supplies

**Table 4: Expenditures for Construction, Services, Materials, Equipment and Supplies<sup>8</sup>**

<b>1. Construction</b>	<b>Annual Expenditures</b>
Military Construction Program <sup>9</sup>	\$81,848,946
Non-Appropriated Fund, Military Family Housing, O&M	\$66,092,510
<b>Total:</b>	<u>\$147,941,456</u>
<b>2. Services</b>	
Services Contracts	\$863,896,477
RDT&E (not elsewhere included)	\$412,978,966
<b>Total:</b>	<u>\$1,276,875,443</u>
<b>3. Materials, Equipment, and Supplies</b>	
Commissary/BX	\$743,599
Health (CHAMPUS, Govt. cost only) <sup>10</sup>	\$25,969,788
Education (Impact aid and tuition assistance)	\$1,580,542
TDY <sup>11</sup>	\$28,684,138
Other Materials, Equipment & Supplies (not elsewhere included)	\$194,840,718
<b>Total:</b>	<u>\$251,818,785</u>
<b>Total Annual Expenditures<sup>12</sup></b>	<u><b>\$1,676,635,684</b></u>

<sup>8</sup> Data as of 30 September 2007. It includes contracts in local economic area or contracts requiring use of locally supplied goods and services. These figures do not completely represent annual expenditures for all major tenants located at Wright-Patterson. The 88 ABW continues to assess the best approach towards gathering more complete data.

<sup>9</sup> Includes expenditures for 445<sup>th</sup> Air Force Reserve Wing Appropriation 3730 (AFR).

<sup>10</sup> Includes costs for dependents of active duty personnel to use civilian medical care facilities when military facilities are unavailable or when travel to the nearest medical facility places undue hardship on the patient. It also includes the cost of retirees and dependents of retirees. Historically, both costs have been included in the EIA. The increase is due to rising medical costs and deployed staff members.

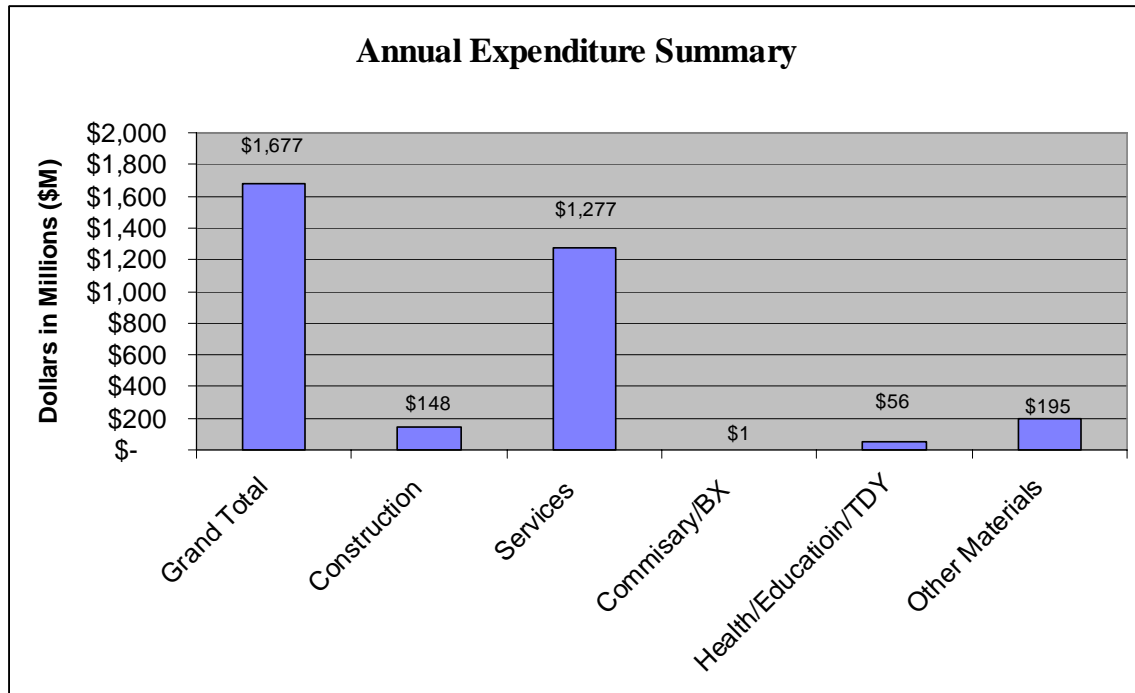
<sup>11</sup> Includes expenditures for meals and lodging of military and civilian personnel on temporary duty at WPAFB.

<sup>12</sup> The total annual expenditures increased 23.8% from FY06 to FY07. The overall increase was due to large increases in services and construction.

## Annual Expenditure Summary Wright-Patterson AFB, OH

(As of: 30 September 2007)

**Figure 8: Annual Expenditure Summary<sup>13</sup>**



<sup>13</sup> Graph built using Table 4 – Expenditures for Construction, Services, Materials, Equipment and Supplies data. The grand total is the same as total annual expenditures on Table 4.

## Estimated Indirect Jobs Created and Total Economic Impact

**Table 5: Estimated Indirect Jobs Created**

<u>Type of Personnel</u> <sup>14</sup>	<u>Number of</u>		<u>Number of</u>
	<u>Base Jobs</u>	<u>Multiplier</u>	<u>Indirect Jobs</u>
Military Active Duty	6,508	0.41	2,668
Trainees and Reservists	2,512	0.16	402
DoD Civilians	9,475	1.57	14,876
Other Civilians	6,322	1.57	9,926
	<u>24,817</u>		<u>27,872</u>
<b>Average FY07 Annual Pay for the Local Community:</b> <sup>15</sup>			<u>\$35,357</u>
<b>Estimated Annual Dollar Value of Jobs Created:</b> <sup>16</sup>			<u><b>\$985,465,008</b></u>

**Table 6: Estimated Total Economic Impact**

<b>Annual Payroll:</b> <sup>17</sup>		<u>\$1,691,865,162</u>
Military	\$467,791,912	
Federal Civilian	\$726,938,234	
Other Civilian	\$497,135,016	
<b>Annual Expenditures:</b> <sup>18</sup>		<u>\$1,676,635,684</u>
<b>Estimated Annual Dollar Value of Jobs Created:</b>		<u>\$985,465,008</u>
<b>Grand Total:</b>		<u><b>\$4,353,965,854</b></u>

<sup>14</sup> Detailed data for types of personnel contained in Table 1. The total amount includes contractor personnel.

<sup>15</sup> 2004 BLS Data is Average Annual Pay for Dayton MSA - Inflation Rate 1.03 obtained from the Office of the Deputy Secretary of the Air Force for Cost and Economics (SAF/FMC).

<sup>16</sup> Estimated annual value of jobs created is derived by multiplying the total number of indirect jobs by the average annual pay for the local community.

<sup>17</sup> Detailed data for annual payroll contained in Table 2 – Summary of Personnel and Gross Payroll by Classification and Housing Location.

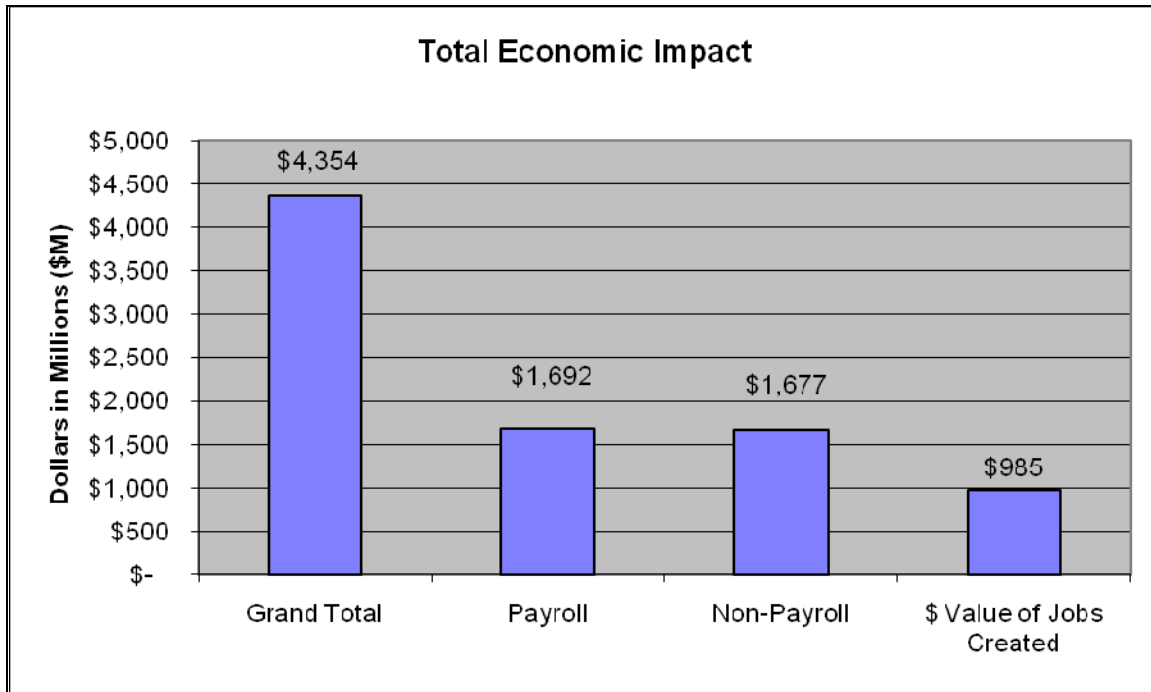
<sup>18</sup> Detailed data on annual expenditures contained in Table 4 – Expenditures for Construction, Services, Materials, Equipment and Supplies.



## Total Economic Impact Wright-Patterson AFB, OH

(As of: 30 September 2007)

**Figure 9: Total Economic Impact on MSA<sup>19</sup>**



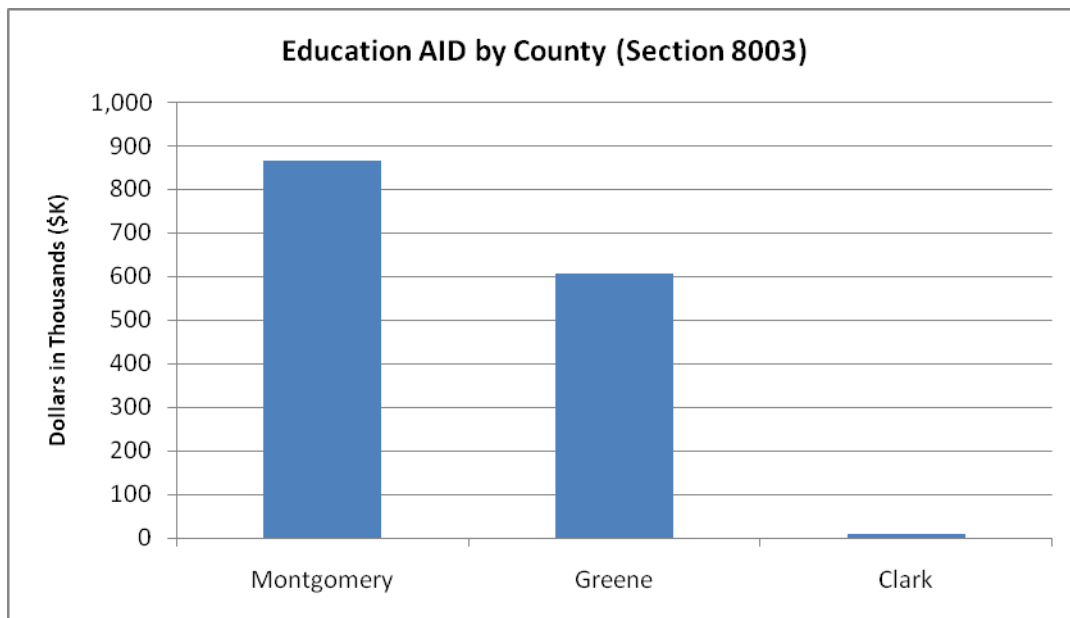
<sup>19</sup> Data from Table 6 – Estimated Total Economic Impact. The Payroll is labeled annual payroll and non-payroll is annual expenditures on Table 6.

## Educational Impact AID

(As of: 30 September 2007)

Impact Aid Section 8003 payments are calculated for individual applicant school districts by a formula that takes into consideration the number of federally connected children, the weights attached to the different categories of federally connected children, the highest of four alternative local contribution rates that simulate the local share of revenue for education in the community, the school district's total current expenditures, total enrollment and attendance data.

**Figure 10: Education AID by County (Section 8003)**



**Table 6: Educational Impact**

<u>School District</u>	<u>County</u>	<u>Federally Connected Students</u>	<u>Impact Aid Amount</u>
<b><u>Section 8003</u></b> <sup>20</sup>			
Mad River Local	Montgomery	604	\$864,840
Fairborn City	Greene	880	\$503,187
Beavercreek Local	Greene	1,384	\$102,674
Huber Heights City	Montgomery	0	\$0
Mad River-Green Local	Clark	213	\$7,971
Dayton City	Montgomery	Not an applicant	
Centerville City	Montgomery	Not an applicant	
Kettering City	Montgomery	Not an applicant	
Springfield City	Clark	Not an applicant	
Xenia City	Greene	Not an applicant	
Tecumseh Local	Clark	Not an applicant	
Miamisburg City	Montgomery	Not an applicant	
Oakwood City	Montgomery	Not an applicant	
West Carrollton	Montgomery	Not an applicant	
Yellow Springs	Clark	Not an applicant	
<b>Total</b>		<u>3,081</u>	<u>\$1,478,672</u>
<b><u>Section 8002</u></b>			
Mad River Local <sup>21</sup>	Montgomery		<u>\$101,870</u>
<b>Grand Total All Educational Impact AID</b>			<u>\$1,580,542</u>

<sup>20</sup> Change to Public Law 81-874 affected the eligibility of some schools. Detailed information about the Impact Aid formula is available on line at <http://www.ed.gov/programs/8003/resources.html>.

<sup>21</sup> Educational Aid of \$101,870 received by Mad River Local compensates for lost revenues realized from federal government acquisition of property.

## Combined Federal Campaign Contributions

(As of: 30 September 2007)

Wright-Patterson's record of contributions to the Combined Federal Campaign speaks for itself. Base military and civilian employees have contributed more than \$50 million during the past 21 years.

**Figure 11: Combined Federal Campaign Contributions**

